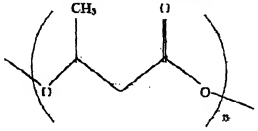
NF 223/01

We claim

1. A process for the isolation of polyhydroxybutyrate of the formula 1



formula 1

said process comprising growing a culture of *Bacillus mycoides* RLJ B-017 in a growth medium and a carbon source selected from sucrose, molasses and pineapple waste for a time period of equal to or greater than twenty four hours, said bacterial host producing intra-cellular polyhydroxybutyrate of the structure **1**, lysing said bacterial host in said culture to release said polyhydroxybutyrate of the structure **1**, and separating the isolate of said polyhydroxybutyrate of the structure 1.

2. A process as claimed in claim 1 wherein said growth medium comprises (g l^{-1}): sucrose, 20; nutrient broth, 8, KH_2PO_4, 1.5; $(NH_4)_2SO_4$, 2.0; $Na_2HPO_4.12H_2O$, 2.239; $MgSO_4.7H_2O$, 0.2, $CaCl_2.2H_2O$, 0.02; $FeSO_47H_2O$, 0.01; and trace-element solution 1 ml l^{-1} said trace element solution comprising (g l^{-1}): $ZnSO_47H_2O$, 0.2; H_3BO_3, 0.6; $MnCl_2$ $4H_2O$, 0.06; $CoCl_2$ $6H_20$, 0.4; $CuSO_44H_2O$, 0.02; $NaMoO_4.2H_2O$, 0.06. with pH 7.2.

3. A process as claimed in claim 1 wherein said growth medium comprises (g l^{-1}): molasses, 20; nutrient broth, 8; KH_2PO_4, 1.5; $(NH_4)_2SO_4$, 2.0; $Na_2IIPO_4.12H_2O$, 2.239; $MgSO_4.7H_2O$, 0.2; $CaCl_2.2H_2O$, 0.02; $FeSO_47H_2O$, 0.01; and trace element solution 1 ml l^{-1} said trace element solution comprising (g l^{-1}): $ZnSO_47H_2O$, 0.2; H_3BO_3, 0.6; $MnCl_2$ $4H_2O$, 0.06; $CoCl_2$ $6H_2O$, 0.4; $CuSO_44H_2O$, 0.02; $NaMoO_4.2H_2O$, 0.06 with pH 7.2.

4. A process as claimed in claim 1 wherein said growth medium comprises (g l^{-1}): pineapple waste, 20; nutrient broth, 8; KH_2PO_4, 1.5; $(NH_4)_2SO_4$, 2.0; $Na_2IIPO_4.12H_2O$, 2.239; $MgSO_4.7H_2O$, 0.2, $CaCl_2.2H_2O$, 0.02; $FeSO_47H_2O$, 0.01; and trace-element solution 1 ml l^{-1} said trace element solution comprising (g l^{-1}): $ZnSO_47H_2O$, 0.2; H_3BO_3, 0.6; $MnCl_2$ $4H_2O$, 0.06; $CoCl_2$ $6H_20$, 0.4; $CuSO_44H_2O$, 0.02; $NaMoO_4.2H_2O$, 0.06. with pH 7.2.

5. A process as claimed in claim 1 wherein the polyhydroxybutyrate of formula **1** is separated from the culture of said organism and pelletised, the cell pellet thus

obtained being treated with a ionic reagent comprising a dispersion of a metal hypochlorite in a halogenated hydrocarbon solvent, to agglomerate said poly-beta-hydroxybutyrate of the structure I

6. A process as claimed in claim 5 wherein the metal hypochlorite is selected from sodium hypochlorite and calcium hypochlorite.

7. A process as claimed in claim 5 wherein the halogenated hydrocarbon solvent comprises chloroform.

8. A process as claimed in claim 5 wherein the concentration of said ionic reagent used is in the range of one molar to one millimolar.

9. A process as claimed in claim 1 wherein the polyhydroxybutyrate of formula 1 is separated from the organism culture by centrifugation to obtain three separate phases, wherein the lower phase containing polyhydroxybutyrae of the structure 1 is dissolved in chloroform and precipitated by adding ethanol.

10. A process as claimed in claim 9 wherein the precipitate is chilled and recovered by further centrifuging to obtain polyhydroxybutyrate of the structure 1.